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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JULIAN MITCHELL, DAVID J. TUBB, and MARK WATSON

Appeal 2009-006524
Application 10/037,043¹
Technology Center 2400

Before JOSEPH L. DIXON, JAY P. LUCAS, and THU A. DANG,
Administrative Patent Judges.

LUCAS, *Administrative Patent Judge.*

DECISION ON APPEAL

¹ Application filed November 9, 2001. The real party in interest is Nortel Networks, Ltd.

STATEMENT OF THE CASE

Appellants appeal from a final rejection of claims 1 to 13, 15 to 20, 23 to 25, 27, and 29 to 31 under authority of 35 U.S.C. § 134(a). Claims 14, 21, 22, 26 and 28 are cancelled. The Board of Patent Appeals and Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b).

We affirm the rejections.

Appellants' invention relates to an intermediate node in a network, called a middlebox, that facilitates sending messages between nodes in two separate address fields, such as between two networks separated by firewalls. In the words of Appellants:

According to an aspect of the present invention there is provided a method of controlling one of a plurality of middleboxes in a communications network, each of the middleboxes being connected to a plurality of entities in an address realm of the communications network, said method comprising the steps of:-

- receiving a control message at a middlebox-identity-providing node in the communications network, said control message comprising information about one of the entities in the communications network;
- using the middlebox identity providing node to determine the identity of a first middlebox connected to said one entity;
- sending said identity to a middlebox control node in the communications network in order to control said first middlebox;
- and wherein the middlebox-identity-providing node is separate from the middlebox control

node and is more directly connected to said one of the entities than the middlebox control node.

For example, the middleboxes may be network address translators and the control message may be a call set-up request message containing information about a user terminal which originated the call set-up request. The middlebox control node may be a call server which provides a service to the entities in the address realm which are preferably user terminals in an enterprise network. By sending the identity information to the middlebox control node in this way, the advantage is achieved that the middlebox control node does not need to have pre-configured information about middlebox identities. The middlebox control node does not need to maintain a list of all the client (e.g. user terminal) to middlebox relations. Also, greater flexibility in network design with regard to the number and location of middle boxes is possible.

(Spec. 2, 1. 24 to 3, 1. 17).

The following illustrates the claims on appeal:

Claim 1:

1. A method of controlling one of a plurality of middleboxes in a communications network, each of the middleboxes being connected to a plurality of entities in a respective one of a plurality of address realms of the communications network, said method comprising the steps of:-

- (i) receiving a control message at a middlebox-identity-providing node in the communications network, said control message comprising information about one of the entities in the communications network;

- (ii) using the middlebox identity providing node to determine the identity of a first middlebox connected to said one entity in its respective one of the plurality of address realms;
- (iii) sending said identity to a middlebox control node in the communications network in order to enable said middlebox control node to send middlebox control messages to said first middlebox, said middlebox control node being located in a different address realm than that of said one of the entities;

and wherein the middlebox-identity-providing node is separate from the middlebox control node and is located in a control signal path from said one of the entities to the middlebox control node.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Xu	US 2002/0114322 A1	Aug. 22, 2002 (filed on Oct. 15, 2001)
Elgebaly	US 2002/0152325 A1	Oct. 17, 2002 (filed on Apr. 17, 2001)
Sollee	US 2003/0009561 A1	Jan. 09, 2003 (filed on Jun. 14, 2001)
Collins	US 2003/0055978 A1	Mar. 20, 2003 (filed on Sep. 18, 2001)

Internet Draft from Huitema, Microsoft, MIDCOM Scenarios (May 17, 2001) (hereinafter "Huitema").

Internet Draft from Srisuresh, Jasmine Networks, Middlebox Communication Architecture and Framework (February 2001) (hereinafter “Srisuresh”).

Memo from Handley et al., SDP: Session Description Protocol (April 1998) (hereinafter “Handley”).

REJECTIONS

The Examiner rejects the claims as follows:

R1: Claims 1 to 3, 6 to 12, 15, 16, 18, 19, 23 to 25, and 27 stand rejected under 35 U.S.C. § 103(a) for being obvious over Xu in view of Huitema and Sollee.

R2: Claims 4, 5, 20 and 29 stand rejected under 35 U.S.C. § 103(a) for being obvious over Xu in view of Huitema and Sollee and further in view of Handley.

R3: Claim 13 stands rejected under 35 U.S.C. § 103(a) for being obvious over Xu in view of Huitema and Sollee and further in view of Srisuresh.

R4: Claim 17 stands rejected under 35 U.S.C. § 103(a) for being obvious over Xu in view of Huitema and Sollee and further in view of Elgebaly

R5: Claims 30 and 31 stand rejected under 35 U.S.C. § 103(a) for being obvious over Xu in view of Huitema and Sollee and further in view of Collins.

We have only considered those arguments that Appellants actually raised in the Briefs. Arguments Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

ISSUE

The issue is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. § 103(a). The issue specifically turns on whether the cited references teach using the middlebox identity providing node to determine the identity of a first middlebox connected to said one entity in its address realm, or sending that identity to a control node to enable the middlebox control node to send control messages to the middlebox.

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

1. Appellants have invented a method of reducing the load on a network control server (middlebox control node) by assigning the responsibility for keeping address data about middleboxes (firewalls, network address translators -- NATs, etc.) to a special device, claimed as a middlebox identity providing node. (Spec 3, ll. 10 to 17). This identity providing node may be a discreet entity on the network (Fig. 2 or Spec. 11, l. 6, or Spec 12, l. 8).
2. The three references Xu, Huitema, and Sollee each teach aspects of communications across data networks, with NATs, firewalls and middleboxes.

PRINCIPLES OF LAW

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

"In reviewing the [E]xaminer's decision on appeal, the Board must necessarily weigh all of the evidence and argument." *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

"What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 419 (2007). To be nonobvious, an improvement must be "more than the predictable use of prior art elements according to their established functions." *Id.* at 417.

"It is common sense that familiar items may have obvious uses beyond their primary purposes, and a person of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 402.

References within the statutory terms of 35 U.S.C. § 103 qualify as prior art for an obviousness determination only when analogous to the

claimed invention. *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992). Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. *In re Deminski*, 796 F.2d 436, 442 (Fed. Cir. 1986); *see also In re Wood*, 599 F.2d 1032, 1036 (CCPA 1979) and *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). Furthermore, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness’ . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418 (quoting *Kahn*, 441 F.3d at 988).

ANALYSIS

*Arguments with respect to the rejection
of claims 1 to 3, 6 to 12, 15, 16, 18, 19, 23 to 25 and 27
under 35 U.S.C. § 103(a) [R1]*

The Examiner has rejected the noted claims for being obvious over Xu, Huitema and Sollee and explained the rejection using teachings from the three cited references, applying the teachings in detail and explaining the rationale for combining the teachings. (Ans. 5 to 13). Appellants argue that the references do not teach the use of the middlebox identity providing node to determine the identity of the middleboxes and send the identity to the control node. (App. Br. 5, middle). We have considered Appellants' arguments (App. Br. 4 to 7, and Reply Br.) in view of the observations of

the Examiner. (Ans. 20 to 29). We find that the Examiner has presented cogent reasons for both the application of the cited art to the claims and the combination of the art's teachings. (*Id.*).

Appellants argue:

Thus, it is submitted that Huitema in combination with Xu does not disclose or even suggest "using the middlebox identity providing node to determine the identity of a first middlebox connected to said one entity in its respective one of the plurality of address realms" or "sending said identity to a middlebox control node in the communications network in order to enable said middlebox control node to send middlebox control messages to said first middlebox" wherein "the middlebox-identity-providing node is separate from the middlebox control node".

(App. Br. 5, middle).

The Examiner has reviewed the claim in view of the references, and in response to Appellants' argument looked for teachings in the references that coherently address the elements of the claimed limitations. (*See* Ans. 26, middle to 27, middle). For each of the five recited questions, the Examiner has presented line and verse in the references showing that the prior art clearly demonstrated the required teachings. Objections to this analysis expressed by the Appellants (e.g. that the CCM server cannot be construed as a firewall or a NAT) have been properly answered by the Examiner. (Ans. 28, middle). We do not find an error in the application of the references.

Further, we find that the references Xu, Huitema and Sollee are in the same field of endeavor, involving middleboxes across multiple address

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realms on a network. They are thus properly combinable. (*See In re Clay*, cited above.)

Appellants' arguments for claims 18, 23, 24, 25, 27 and those dependent on them are similar to those of claim 1 and are considered non-persuasive for the reasons stated above.

*Arguments with respect to the rejection
of claims 4, 5, 13, 17, 20, and 29 to 31
under 35 U.S.C. § 103(a) [R2-R5]*

Appellants rely on the arguments above concerning the independent claims against the noted rejections R2 to R5. For the reasons expressed above, we find the arguments unpersuasive of Examiner error.

CONCLUSIONS OF LAW

Based on the findings of facts and analysis above, we conclude that Appellants have not shown that the Examiner erred in rejecting claims 1 to 13, 15 to 20, 23 to 25, 27, and 29 to 31 respectively under rejection R1 to R5.

DECISION

We affirm the Examiner's rejections R1 to R5 of claims 1 to 13, 15 to 20, 23 to 25, 27, and 29 to 31.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

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AFFIRMED

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